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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,764	04/24/2001	Jes Thyssen	10932/162	6664

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EXAMINER

NOLAN, DANIEL A

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 06/14/2002

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/841,764

Applicant(s)

THYSSEN ET AL.

Examiner

Daniel A. Nolan

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-44 and 46-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-44 and 46-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Terminal Disclaimer

2. The terminal disclaimer filed on 9 January 2002 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on application number 6,256,606 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Information Disclosure Statement

3. The information disclosure statement submitted on 09 January 2002 is now in compliance with the provisions of 37 CFR 1.97. Accordingly, the petition is granted and the examiner is considering the information disclosure statement.

Response to Amendment

4. The response filed 09 January 2002 has been applied to the following effect:
 - The abstract of the disclosure is changed and the objection is withdrawn.

- The specification has been changed as indicated and the objections are withdrawn as being satisfied.
- The nonstatutory double patenting rejection of claims is withdrawn as being overcome by terminal disclaimer.
- Claim 45 has been cancelled.
- The remaining claims were changed as indicated and the corresponding 35 USC § 112 rejections are withdrawn as having been satisfied.

Response to Arguments

5. Applicant's arguments filed 09 January 2002 have been fully considered but they are not persuasive.

- The amendments made ostensibly to resolve the issues with the claims do not serve to overcome the prior art of reference.
- The stipulation of *immediately before* would not substantially differ from a reference to a *prior* item (claims 21, 34, 38 and 46).
- The additional feature applied to claim 38 is addressed with a new reference included specifically for that feature, to remove the ambiguity that would be expected were an objection to be based on the absence of a specification.

Claim Rejections - 35 USC § 103

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Rapeli & Delargy et al

7. Claims 21-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli (U.S. Patent 6,182,032 B1) in view of Delargy et al (U.S. Patent 6,029,127).

8. Regarding claim 21, the device of Rapeli includes a *Voice Activity Detection circuit* (figure 2 item 29) coupled to a *processor* for the purpose of *selectively coding* (ibid. item 22). Rapeli further describes the coding as being a *plurality of coding modes for speech* (column 4 line 39-48) *and one for silence* (as *silence & pauses* in column 7 line 27). By not specifying a dependency between processing speech and non-speech segments, Rapeli makes it clear to a person of ordinary skill in the art of speech signal

processing that *the selection of the silent mode would be made independent of any previous speech coding mode*.

With particular regard to claim 38, the feature of *silence analysis and coding* is disclosed directly by Delargy et al in figure 1, which corresponds precisely with figure 7 of the immediate application.

9. Regarding claim 22, the claim is set forth with the same limits as claim 21. Rapeli introduces his invention as being applicable to a *wireless communication* environment (in figure 1 and in column 1 line 14).

10. Regarding claim 23, the claim is set forth with the same limits as claim 22. Rapeli defines his invention as being particular to *telephony* (ibid, line 13).

11. Regarding claim 24, the claim is set forth with the same limits as claim 23. Rapeli defines his invention as being one of a *cellular telephone* (ibid, line 12).

12. Regarding claim 25, the claim is set forth with the same limits as claim 21. While Rapeli does not characterize the device as *hand-held*, the inclusion of a *laptop* portable computer (item 8 in figure 1) configured with *wireless communication* capability (ibid. item 7) or more so, the well known *wireless internet connections* commercially advertised as available at the time of the invention. This configuration would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time

of the invention that the laptop was chosen over a desktop for its portability and that the natural progression from *desktop* to laptop would next incorporate *hand-held* to make the configuration even more portable.

13. Regarding claim 26 as understood by the Examiner, the claim is set forth with the same limits as claim 21. Rapeli makes it clear that his device will operate as part of a *computer network-based communications* (column 1 line 9).

14. Regarding claim 27 as understood by the Examiner, the claim is set forth with the same limits as claim 26. Rapeli makes it clear that his device operates with the *Internet* (column 1 line 14).

15. Regarding claim 28 as understood by the Examiner, the claim is set forth with the same limits as claim 27. Rapeli makes it clear that his *Internet* device includes the capability of *transmitting encoded speech* (shown in figures 1 & 2 and as is required to provide *speech capabilities* (column 1 line 16).

16. Regarding claim 29 as understood by the Examiner, the claim is set forth with the same limits as claim 21. The features of *computer network* and *telephony* were addressed in response to claims 23 through 26 and the claim is rejected for the same reason.

17. Regarding claim 30 as understood by the Examiner, the claim is set forth with the same limits as claim 29. The feature of the claim, being of a *telephone network* being *cellular*, is the same as those of a computer network and *telephony* as addressed in response to claims 23 and 24 and the claim is rejected for the same reason.

18. Regarding claim 31, the claim is set forth with the same limits as claim 21. Incorporation of a *data processor* is shown in figure 1 with the *laptop* (item 8) providing that functionality.

19. Regarding claim 32 as understood by the Examiner, the claim is set forth with the same limits as claim 21. As is the case for claims 29 & 30, the features of *computer network* and *telephony* were addressed in response to claims 23 through 26 and the claim is rejected for the same reason.

20. Regarding claim 33, the claim is set forth with the same limits as claim 21. Rapeli discloses *discontinuous* processing as taking place after a *silence description coding* (column 7 lines 25-30) that would be without a bi-directional communication (ibid. line 54).

21. Regarding claim 34, Rapeli discloses a *multi-rate transcoder* operating in three modes, two suitable for speech and a lower rate for silence. With such direction coupled with the inadvisability of combining different transmissions for the same signal

simultaneously would have made it obvious to a person of ordinary skill in the art of speech signal processing to process each speech segment according to its merits so as to convey abrupt transitions faithfully.

The additional feature whereby the processes are independent between speech and silence is the same as that of claim 21 and the rejection is upheld for the same reasons.

22. Regarding claim 35, the claim is set forth with the same limits as claim 34.

Rapeli discloses *transmitting a 1st and 2nd segment* (in figure 5), in this case, for radio.

Rapeli & Fujino et al

23. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Fujino et al (U.S. Patent 5,436,899).

24. Regarding claim 36, the claim is set forth with the same limits as claim 35. While Rapeli discusses neither the process of *error checking* nor the use of *redundant data*, Fujino et al do, in providing for increased performance measures and disclosing the techniques required for voice coding and transmission (column 12 lines 25-43).

With the instruction that the step of *error checking* is included as a requisite, namely that *the first function necessary for adopting an embedded multiplexing method is a redundancy detecting function of voice transmission*, Fujino et al would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time

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of the invention that to incorporate the means for detecting and remedying errors is essential to competent speech signal transmission.

25. Regarding claim 37, the claim is set forth with the same limits as claim 36. Fujino et al incorporates the feature of *redundancy with error checking* as addressed in response to claim 36, and the claim is rejected for the same reasons provided above.

Rapeli

26. Claims 38-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli.

27. Regarding claim 38 as understood by the Examiner, while the components of coder, decoder and connecting network are well-known in the prior art of record as disclosed by Rapeli (in column 35-46), the arrangement of processing in order, a first segment and second segment followed by applying silence to the second segment would have been obvious to a person of ordinary skill in the art of speech signal processing to apply the requisite coding scheme to speech called for by speech, voice by voice and silence by silence in accord with the well known practices established to that date by the cited standards.

28. Regarding claim 39 as understood by the Examiner, the claim is set forth with the same limits as claim 38. Rapeli discloses *generating reproduced speech signals*

(column 4 line 38 explanation of figure 1 item 10) that would necessarily be expected to be reasonably consistent with the original signal.

29. Regarding claim 40, the claim is set forth with the same limits as claim 39. The features of the claim are the same as claim 33 and the claim is rejected for the same reasons.

30. Regarding claim 41, the claim is set forth with the same limits as claim 39. The features of the claim are the same as claim 22 and the claim is rejected for the same reasons.

31. Regarding claim 42, the claim is set forth with the same limits as claim 39. The features of the claim are the same as claim 26 and the claim is rejected for the same reasons.

32. Regarding claim 43, the claim is set forth with the same limits as claim 42. Rapeli discloses the applicability to Local Area Networks (column 1 line 35).

33. Regarding claim 44, the claim is set forth with the same limits as claim 42. Rapeli discloses the application of wired networks (column 1 line 13).

34. Regarding claim 45, the claim is set forth with the same limits as claim 44.

Rapeli discloses the application of mixed wired/wireless networks (column 1 line 14) in any combination.

35. Regarding claim 46, Rapeli addresses all features, namely:

- Those features of *multi-rate coder and decoder* are the same as claim 38 and the grounds of rejection applied there are maintained in this instance.
- Rapeli discloses the feature of providing *comfort noise* (column 1 line 64).

Rapeli & Fujino et al

36. Claims 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Fujino et al.

37. Regarding claims 47 and 48, the claims are set forth with the same limits as claim 46 and 47, respectively. The features of the claim are the same as claim 36 and 37, and the claims are rejected for the same reasons.

Rapeli, Fujino et al & Chung et al

38. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Fujino et al and further in view of Chung et al ("*Multilevel RS/Convolutional Concatenated Coded QAM for Hybrid IBOC-AM Broadcasting*", IEEE Transactions on Broadcasting, pages 49-59, March 2000).

39. Regarding claim 49, the claim is set forth with the same limits as claim 48. Since the prior art of record and Chung et al share the interest with the immediate application of coding speech signals effectively, Chung et al's acknowledgement of the relationship between power and bandwidth limits on providing sufficient redundancy (introduced toward the end of the abstract) illustrate that the relationships are well known in fields involving transmitting and receiving. Consequently, it would have been obvious to a person of ordinary skill in the field of speech signal processing to adjust the redundant data so as to avoid congestion and bottlenecks when remaining bandwidth would be insufficient to maintain a signal with numerous correction data.

Rapeli, Fujino et al, Chung et al & Mano et al

40. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Fujino et al and further in view of Chung et al and further in view of Mano et al ("Design of a Pitch Synchronous Innovation CELP Coder for Mobile Communications", IEEE Journal on Selected Areas in Communications, pages: 31 – 41, Jan. 1995).

41. Regarding claim 50, the claim is set forth with the same limits as claim 49. As the prior art of record and Mano et al all have interest in coding and transmitting, the teachings of Mano et al with respect to the use of *perceptual weighting filters* (introduced in the Abstract) are germane to the problem of maintaining signal quality. As a result, it would have been obvious to a person of ordinary skill in the art of speech

signal processing at the time of the invention to employ such filtering to limit the extreme transients introduced by signal reconstruction to an acceptable audio level.

Rapeli & Caire et al

42. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Caire et al ("*CDMA System Design through Asymptotic Analysis*", Global Telecommunications Conference, pages 2456 - 2460 vol.5, 5-9 Dec. 1999).

43. Regarding claim 51, the claim is set forth with the same limits as claim 46. Where Rapeli selects the best coding that would provide satisfactory results consuming at the lower cost, he does not detail those factors that would cause a switch in coding schemes. While loss of power would seem to be one such obvious choice, Rapeli does not specifically disclose this as a factor but instead determines the need for switching on the basis of perceived signal characteristics relating to speech. However, Caire et al examines other areas such as power considerations (last paragraph, right column page 2458) to anticipate fluctuations that would adversely affect signal quality. It would have been obvious to a person of ordinary skill in the field of speech signal processing to reduce the coding rate in an effort to conserve power when necessary and to anticipate problems rather than force a loss of transmission altogether.

Rapeli & Mano et al

44. Claims 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rapeli in view of Mano et al.

45. Regarding claim 52, the claim is set forth with the same limits as claim 46.

Where Rapeli selects the best coding that would provide satisfactory results consuming at the lower cost, he does not detail those factors that would cause a switch in coding schemes. Mano et al discloses that interference (as *non-periodic background noise*, 2nd paragraph, right column page 35) would be an indication that a change in coding is needed to avoid poor signal. It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention that interference that *electromagnetic interference* by itself would degrade the source signal enough to switch to a higher coding mode, and consequently that early detection and change would anticipate the event and reduce the data lost from a signal degraded enough to cause the transition.

46. Regarding claim 53, the claim is set forth with the same limits as claim 46. The feature of the claim is the same as claim 52, with the exception being that the *interference is associated with radio frequency level* fluctuations. The claim is therefore rejected for the same reasons, there being no apparent difference between the origin of the frequencies stated in the specification and their effect being well known to be identical.

Conclusion

47. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Howitt (U.S. Patent 5,742,930) codes specifically on the basis of detected silence in a similar manner as the features claimed in the immediate application (figures 4 & 5).

48. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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49. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A. Nolan whose telephone number is (703) 305-1368. The examiner can normally be reached on Monday, Tuesday, Thursday & Friday, between the hours of 6:30 AM and 5:00 PM.

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (703) 305-4379.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE".

Formal response to this action may be faxed according to the above instructions, or mailed to:

Box AF
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Washington, D.C. 20231

or hand-delivered to:

Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Informal fax communications may be sent to the Examiner at (703) 746-5823. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at phone (703) 305-4700.

Daniel A. Nolan
Examiner
Art Unit 2641

dan

January 28, 2002


Richmond Davis
Primary Examiner